<u>RAW SEQUENCE LISTING</u>

The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.

Application Serial Number: _10/642,248A_
Source: _1Fw/16_
Date Processed by STIC: _9/8/06_

ENTERED

IFW16

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 3 <110> APPLICANT: DeAngelis, Paul
 4         Jing, Wei
 6 <120> TITLE OF INVENTION: TARGETED GLYCOSAMINOGLYCAN POLYMERS BY POLYMER GRAFTING AND
METHODS OF
 7         MAKING AND USING SAME
 9 <130> FILE REFERENCE: 3554.097
11 <140> CURRENT APPLICATION NUMBER: 10/642,248A
12 <141> CURRENT FILING DATE: 2003-08-15
14 <150> PRIOR APPLICATION NUMBER: 60/404,356
15 <151> PRIOR FILING DATE: 2002-08-16
17 <150> PRIOR APPLICATION NUMBER: 60/479,432
18 <151> PRIOR FILING DATE: 2003-06-18
20 <150> PRIOR APPLICATION NUMBER: 60/491,362
21 <151> PRIOR FILING DATE: 2003-07-31
23 <150> PRIOR APPLICATION NUMBER: 10/195,908
24 <151> PRIOR FILING DATE: 2002-07-15
26 <150> PRIOR APPLICATION NUMBER: 09/437,277
27 <151> PRIOR FILING DATE: 1999-11-01
29 <150> PRIOR APPLICATION NUMBER: 60/107,929
30 <151> PRIOR FILING DATE: 1998-11-11
32 <150> PRIOR APPLICATION NUMBER: 09/283,402
33 <151> PRIOR FILING DATE: 1999-04-01
35 <150> PRIOR APPLICATION NUMBER: 60/080,414
36 <151> PRIOR FILING DATE: 1998-04-02
38 <150> PRIOR APPLICATION NUMBER: 09/842,484
39 <151> PRIOR FILING DATE: 2001-04-25
41 <150> PRIOR APPLICATION NUMBER: 60/199,538
42 <151> PRIOR FILING DATE: 2000-04-25
44 <150> PRIOR APPLICATION NUMBER: 10/142,143
45 <151> PRIOR FILING DATE: 2002-05-08
47 <150> PRIOR APPLICATION NUMBER: 60/289,554
48 <151> PRIOR FILING DATE: 2001-05-08
50 <160> NUMBER OF SEQ ID NOS: 71
52 <170> SOFTWARE: PatentIn version 3.1
54 <210> SEQ ID NO: 1
55 <211> LENGTH: 2920
56 <212> TYPE: DNA
57 <213> ORGANISM: Pasteurella multocida
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64 aaatgcaaag aaaaactctc agcacatcct tctgttaatt cagcacatct ttctgtaaat       180
66 aaagaagaaa aagtcaatgt ttgcgatagt ccgttagata ttgcaacaca actgttactt       240
68 tccaacgtaa aaaaattagt actttctgac tcggaaaaaa acacgttaaa aaataaatgg       300
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 72 aaagattttc ccaaagatct ggttttagcg cctttacctg atcatgttaa tgattttaca    420
 74 tggtacaaaa agcgaaagaa aagacttggc ataaaacctg aacatcaaca tgttggtctt    480
 76 tctattatcg ttacaacatt caatcgacca gcaattttat cgattacatt agcctgttta    540
 78 gtaaaccaaa aaacacatta cccgtttgaa gttatcgtga cagatgatgg tagtcaggaa    600
 80 gatctatcac cgatcattcg ccaatatgaa aataaattgg atattcgcta cgtcagacaa    660
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 90 gaagtgaaaa ccaataatag tgttgccgca aaaggggaag aacagtttc tctggattgg     960
 92 cgcttagaac aattcgaaaa aacagaaaat ctccgcttat ccgattcgcc tttccgtttt   1020
 94 tttgcggcgg gtaatgttgc tttcgctaaa aaatggctaa ataaatccgg tttctttgat   1080
 96 gaggaattta tcactgggg tggagaagat gtggaatttg gatatcgctt attccgttac   1140
 98 ggtagtttct ttaaaactat tgatggcatt atggcctacc atcaagagcc accaggtaaa   1200
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124 gataacacat caattaagaa acttggcatt caaaagaaaa accattttgt tgtagtcaat   1980
126 cagtcattaa atagacaagg cataacttat tataattatg acgaatttga tgatttagat   2040
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130 aaagatatta aaatcatcca gaataaagat gccaaaatcg cagtcagtat tttttatccc   2160
132 aatacattaa acggcttagt gaaaaaacta aacaatatta ttgaatataa taaaaatata   2220
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136 ctagccttct atcataaaca tcaagtgaat attttactaa ataatgatat ctcatattac   2340
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152 ttagaaaaga aaaccggcca tgtatttaat aaaacatcga ccctgactta tatgccttgg   2820
154 gaacgaaaat tacaatggac aaatgaacaa attgaaagtg caaaagagg agaaaatata   2880
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160 <211> LENGTH: 972
161 <212> TYPE: PRT
162 <213> ORGANISM: Pasteurella multocida
164 <400> SEQUENCE: 2
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171             20                  25                  30
174 Lys Ile Val Glu Phe Gln Ile Thr Lys Cys Lys Glu Lys Leu Ser Ala
175         35                  40                  45
178 His Pro Ser Val Asn Ser Ala His Leu Ser Val Asn Lys Glu Glu Lys
179     50                  55                  60
182 Val Asn Val Cys Asp Ser Pro Leu Asp Ile Ala Thr Gln Leu Leu Leu
183 65                  70                  75                  80
186 Ser Asn Val Lys Lys Leu Val Leu Ser Asp Ser Glu Lys Asn Thr Leu
187             85                  90                  95
190 Lys Asn Lys Trp Lys Leu Leu Thr Glu Lys Lys Ser Glu Asn Ala Glu
191             100                 105                 110
194 Val Arg Ala Val Ala Leu Val Pro Lys Asp Phe Pro Lys Asp Leu Val
195         115                 120                 125
198 Leu Ala Pro Leu Pro Asp His Val Asn Asp Phe Thr Trp Tyr Lys Lys
199     130                 135                 140
202 Arg Lys Lys Arg Leu Gly Ile Lys Pro Glu His Gln His Val Gly Leu
203 145                 150                 155                 160
206 Ser Ile Ile Val Thr Thr Phe Asn Arg Pro Ala Ile Leu Ser Ile Thr
207             165                 170             175
210 Leu Ala Cys Leu Val Asn Gln Lys Thr His Tyr Pro Phe Glu Val Ile
211         180                 185                 190
214 Val Thr Asp Asp Gly Ser Gln Glu Asp Leu Ser Pro Ile Ile Arg Gln
215         195                 200                 205
218 Tyr Glu Asn Lys Leu Asp Ile Arg Tyr Val Arg Gln Lys Asp Asn Gly
219     210                 215                 220
222 Phe Gln Ala Ser Ala Ala Arg Asn Met Gly Leu Arg Leu Ala Lys Tyr
223 225                 230                 235                 240
226 Asp Phe Ile Gly Leu Leu Asp Cys Asp Met Ala Pro Asn Pro Leu Trp
227             245                 250                 255
230 Val His Ser Tyr Val Ala Glu Leu Leu Glu Asp Asp Asp Leu Thr Ile
231         260                 265                 270
234 Ile Gly Pro Arg Lys Tyr Ile Asp Thr Gln His Ile Asp Pro Lys Asp
235         275                 280                 285
238 Phe Leu Asn Asn Ala Ser Leu Leu Glu Ser Leu Pro Glu Val Lys Thr
239     290                 295                 300
242 Asn Asn Ser Val Ala Ala Lys Gly Glu Gly Thr Val Ser Leu Asp Trp
243 305                 310                 315                 320
246 Arg Leu Glu Gln Phe Glu Lys Thr Glu Asn Leu Arg Leu Ser Asp Ser
247             325                 330                 335
250 Pro Phe Arg Phe Phe Ala Ala Gly Asn Val Ala Phe Ala Lys Lys Trp
251         340                 345                 350
254 Leu Asn Lys Ser Gly Phe Phe Asp Glu Glu Phe Asn His Trp Gly Gly
255         355                 360                 365
258 Glu Asp Val Glu Phe Gly Tyr Arg Leu Phe Arg Tyr Gly Ser Phe Phe
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266 Glu Asn Glu Thr Asp Arg Glu Ala Gly Lys Asn Ile Thr Leu Asp Ile
267                   405                   410                   415
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271                   420                   425                   430
274 Asp Ser His Ile Asn Arg Val Pro Leu Val Ser Ile Tyr Ile Pro Ala
275             435                   440                   445
278 Tyr Asn Cys Ala Asn Tyr Ile Gln Arg Cys Val Asp Ser Ala Leu Asn
279       450                   455                   460
282 Gln Thr Val Val Asp Leu Glu Val Cys Ile Cys Asn Asp Gly Ser Thr
283 465                   470                   475                   480
286 Asp Asn Thr Leu Glu Val Ile Asn Lys Leu Tyr Gly Asn Asn Pro Arg
287                   485                   490                   495
290 Val Arg Ile Met Ser Lys Pro Asn Gly Gly Ile Ala Ser Ala Ser Asn
291                   500                   505                   510
294 Ala Ala Val Ser Phe Ala Lys Gly Tyr Tyr Ile Gly Gln Leu Asp Ser
295             515                   520                   525
298 Asp Asp Tyr Leu Glu Pro Asp Ala Val Glu Leu Cys Leu Lys Glu Phe
299       530                   535                   540
302 Leu Lys Asp Lys Thr Leu Ala Cys Val Tyr Thr Thr Asn Arg Asn Val
303 545                   550                   555                   560
306 Asn Pro Asp Gly Ser Leu Ile Ala Asn Gly Tyr Asn Trp Pro Glu Phe
307             565                   570                   575
310 Ser Arg Glu Lys Leu Thr Thr Ala Met Ile Ala His His Phe Arg Met
311             580                   585                   590
314 Phe Thr Ile Arg Ala Trp His Leu Thr Asp Gly Phe Asn Glu Lys Ile
315             595                   600                   605
318 Glu Asn Ala Val Asp Tyr Asp Met Phe Leu Lys Leu Ser Glu Val Gly
319       610                   615                   620
322 Lys Phe Lys His Leu Asn Lys Ile Cys Tyr Asn Arg Val Leu His Gly
323 625                   630                   635                   640
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327             645                   650                   655
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331             660                   665                   670
334 Tyr Asp Glu Phe Asp Asp Leu Asp Glu Ser Arg Lys Tyr Ile Phe Asn
335       675                   680                   685
338 Lys Thr Ala Glu Tyr Gln Glu Glu Ile Asp Ile Leu Lys Asp Ile Lys
339       690                   695                   700
342 Ile Ile Gln Asn Lys Asp Ala Lys Ile Ala Val Ser Ile Phe Tyr Pro
343 705                   710                   715                   720
346 Asn Thr Leu Asn Gly Leu Val Lys Lys Leu Asn Asn Ile Ile Glu Tyr
347                   725                   730                   735
350 Asn Lys Asn Ile Phe Val Ile Val Leu His Val Asp Lys Asn His Leu
351             740                   745                   750
354 Thr Pro Asp Ile Lys Lys Glu Ile Leu Ala Phe Tyr His Lys His Gln
355             755                   760                   765
358 Val Asn Ile Leu Leu Asn Asn Asp Ile Ser Tyr Tyr Thr Ser Asn Arg
359             770                   775                   780
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RAW SEQUENCE LISTING   DATE: 09/08/2006
PATENT APPLICATION: US/10/642,248A   TIME: 11:35:33

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363 785                 790                 795                 800
366 Leu Asn Leu Asn Cys Glu Tyr Ile Ile Phe Asp Asn His Asp Ser Leu
367                 805                 810                 815
370 Phe Val Lys Asn Asp Ser Tyr Ala Tyr Met Lys Lys Tyr Asp Val Gly
371                 820                 825                 830
374 Met Asn Phe Ser Ala Leu Thr His Asp Trp Ile Glu Lys Ile Asn Ala
375             835                 840                 845
378 His Pro Pro Phe Lys Lys Leu Ile Lys Thr Tyr Phe Asn Asp Asn Asp
379     850                 855                 860
382 Leu Lys Ser Met Asn Val Lys Gly Ala Ser Gln Gly Met Phe Met Thr
383 865                 870                 875                 880
386 Tyr Ala Leu Ala His Glu Leu Leu Thr Ile Ile Lys Glu Val Ile Thr
387             885                 890                 895
390 Ser Cys Gln Ser Ile Asp Ser Val Pro Glu Tyr Asn Thr Glu Asp Ile
391             900                 905                 910
394 Trp Phe Gln Phe Ala Leu Leu Ile Leu Glu Lys Lys Thr Gly His Val
395             915                 920                 925
398 Phe Asn Lys Thr Ser Thr Leu Thr Tyr Met Pro Trp Glu Arg Lys Leu
399     930                 935                 940
402 Gln Trp Thr Asn Glu Gln Ile Glu Ser Ala Lys Arg Gly Glu Asn Ile
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411 <211> LENGTH: 2979
412 <212> TYPE: DNA
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420 aaattatttg agaagtctgc tgaaacctac gggcgaaaaa tcgttgaatt ccaaattatc     180
422 aaatgtaaag aaaaactctc gaccaattct tatgtaagtg aagataaaaa aacagtgtt      240
424 tgcgatagct cattagatat cgcaacacag ctcttacttt ccaacgtaaa aaaattaact     300
426 ctatccgaat cagaaaaaaa cagtttaaaa aataaatgga atctatcac tgggaaaaaa      360
428 tcggagaacg cagaaatcag aaaggtggaa ctagtaccca agattttcc taaagatctt      420
430 gttcttgctc cattgccaga tcatgttaat gattttacat ggtacaaaaa tcgaaaaaaa     480
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434 aatcgtagcc gtattttaga tataacgtta gcctgtttgg tcaatcagaa aacaaactac     600
436 ccatttgaag tcgttgttgc agatgatggt agtaaggaaa acttacttac cattgtgcaa     660
438 aaatacgaac aaaaacttga cataaagtat gtaagacaaa aagattatgg atatcaattg     720
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446 caattcctta acgatccata tttaatagaa tcactacctg aaaccgctac aaataacaat     960
448 ccttcgatta catcaaaagg aaatatatcg ttggattgga gattagaaca tttcaaaaaa    1020
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RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 09/08/2006
PATENT APPLICATION: US/10/642,248A   TIME: 11:35:34

Input Set : A:\PTO.SS.txt
Output Set: N:\CRF4\09082006\J642248A.raw

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:58; N Pos. 9,12,18,24,27
Seq#:59; N Pos. 7,10,16,22,25
Seq#:67; Xaa Pos. 4,6,8,9,10,11,14,15,16,18,19,20,21,22,23,24,25,28,29,30
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Seq#:68; Xaa Pos. 1,3,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,29
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Seq#:68; Xaa Pos. 73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,88,89,90,91
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VERIFICATION SUMMARY   DATE: 09/08/2006
PATENT APPLICATION: US/10/642,248A   TIME: 11:35:34

Input Set : **A:\PTO.SS.txt**
Output Set: **N:\CRF4\09082006\J642248A.raw**

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L:4589 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59 after pos.:0
L:5528 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:67 after pos.:0
M:341 Repeated in SeqNo=67
L:5626 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:68 after pos.:0
M:341 Repeated in SeqNo=68
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